REMARKS

The examiner rejects independent claims 1, 35, 36, 39, and 56 as anticipated under §102(b) by Nielsen (US2002/0080863). The claimed invention determines signal impairment correlations for use in received signal processing. Independent claim 1 includes the step of adapting model fitting parameters responsive to recurring measurements of received signal impairment correlations. In other words, the claimed model fitting parameters are adjusted responsive to impairment correlation measurements to "fit" the model to the measurements. The fitting process may, for example, be a Least Squares (LS) fitting, wherein the model fitting parameters (e.g., α and β) are iteratively adapted to minimize the error between the measured impairment correlations and the modeled impairment correlations.

Nielsen describes an Adaptive Generalized Matched Filter (AGMF) RAKE receiver system. In Nielsen, an AMGF weight determination module determines combining weights by varying candidate combining weights until the signal-to-noise ratio (SNR) of the RAKE receiver output reaches a peak value (see Abstract). More particularly, Nielsen uses different total noise covariance matrices $\mathbf{R}_u$, where $\mathbf{R}_u$ may be calculated as the sum of a predetermined impairment $\mathbf{R}_{IND}$ and a measured impairment $\mathbf{R}_{DEP}$, scaled as a function of a scaling factor r_o, to determine different sets of combining weights $\mathbf{w}$. It is important to note that the AMGF module generates the different total noise covariance matrices by varying r_o while holding $\mathbf{R}_{IND}$ and $\mathbf{R}_{DEP}$ constant. For each of the resulting sets of combining weights $\mathbf{w}$, Nielsen determines a RAKE receiver output z and a corresponding SNR. Nielsen selects the combining weights $\mathbf{w}$ that produce the maximum SNR. See at least ¶s [0040] and [0042] – [0046].

Contrary to the examiner's assertions, Nielsen does not teach adapting the <u>model fitting parameters</u> responsive to <u>recurring measurements</u> of the received signal impairment correlations, as required by independent claim 1. As discussed above, Nielsen varies a scaling

factor r_o while holding $\mathbf{R}_{IND}$ and $\mathbf{R}_{DEP}$ constant. <u>As such, Nielsen does not use recurring signal impairment correlation measurements to adapt</u> r_o. Instead, it determines $\mathbf{R}_{IND}$ and $\mathbf{R}_{DEP}$, and then varies r_o to optimize signal SNR.

Further, the scaling factor r_o described by Nielsen is not equivalent to the claimed model fitting parameter. Nielsen simply adjusts the scaling factor r_o to optimize SNR or some other received signal quality metric. Such a scaling factor cannot be credibly argued as being the same or even similar to the applicant's clearly described and claimed model fitting parameters, which are adapted to minimize an error between terms of an impairment correlation model and measured impairment correlations. Thus, Nielsen's scaling factor r_o is wholly different from the claimed model fitting parameters.

For at least these reasons, independent claim 1 and all claims depending therefrom are new and non-obvious over Nielsen. The applicants respectfully request reconsideration.
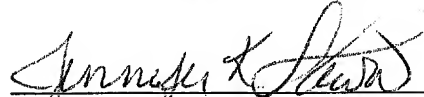
Each of the remaining independent claims include the above-discussed limitation. For example, independent claims 35 and 36 claim program instructions and one or more impairment modeling circuits, respectively, that adapt model fitting parameters responsive to recurring measurements of the received signal impairment correlations. Similarly, independent claim 39 claims a receiver circuit configured to calculate RAKE combining weights by, inter alia, adapting values of first and second fitting parameters to fit the model to measured received signal impairment correlations. Finally, independent method claim 56 requires updating terms of an impairment correlation model based on measured impairment correlations. Therefore, for substantially the same reasons presented above, independent claims 35, 36, 39, and 56 and all claims depending therefrom are new and non-obvious over Nielsen.

In light of the above remarks, the applicants respectfully request that the examiner reconsider and withdraw all rejections. Should any issues remain unresolved, the applicants

request that the examiner call the undersigned so that any such issues may be expeditiously

resolved.

Respectfully submitted,

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